

DURMAT[®] 489 NiBSi

Self fluxing alloy, gas atomized

Description:

DURMAT[®] 489 is a nickel hardsurfacing alloy, which can be deposited using the Spray&Fused torch. Deposits of these alloys have high oxidation resistance and are easily finished with a file or grinding wheel.

Typical Uses:

In foundries for repair of castings or mould parts. It is used extensively in the glass industry.

Application with the Spray&Fused Torch.

The Spray&Fused torch combines an oxy-acetylene welding torch with a powder hopper and mixer. It is the ideal tool for making the kind of welded deposits usually required in repairing surface flaws in cast iron parts. The surface to be overlaid must be free of grease, rust or dirt. It should be bright clean metal, made so by machining grinding or chipping. Narrow cracks or deep indentations should be ground out to provide easy entry of the alloy. Worn areas should be undercut if necessary, to provide a uniform depth of overlay.

Spot and edge repair can usually be done without pre-heating the entire part. Where the deposit is larger and involves a part of greater mass, pre-heating is advisable to prevent too rapid cooling of the overlay. In such cases, pre-heat the entire part to 315 - 425^oC. In all cases, heat the deposit area to 595 - 650^oC before spraying.

CAUTION: Do not heat any part of the cast iron over 815^oC during welding as this will cause oxidation of the surface and create hard spots adjacent to the deposit. If this critical temperature is approached, welding should be stopped and the part allowed to cool to 315-425^oC.

The powder is applied by pressing the lever on the torch, which admits the powder to the gas stream. After passing through the flame, the molten particles are deposited on the work. When a small amount of alloy has been deposited, the powder is stopped (by releasing the lever), and the torch flame used to fuse the deposited material to the base metal. This spray-fuse cycle is repeated until sufficient build-up has been achieved. On all except large mass parts, the Spray&Fused torch does all the heating required: pre-heating, spraying and fusing.

Finishing and deposit

Deposits are easily finished, by grinding or by filing.

Typical chemical composition (%):

Ni	B	Si	C	Others
balance	0.5-1.1	1.9-2.3	0,02	<2,0

Physical Properties:

Hardness:	16-21 HRC
Melting Point:	975 °C
Specific Gravity	8.4
Particle Size Range in µm *):	106/22, 75/22, others on request